# Universiti Teknologi MARA

# Queue Management Mobile Application with Geo-fencing

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# ABSTRACT

Queuing can be cumbersome, tedious, and sometimes unsystematic which is inefficient and cause people leave or not join the queue to begin with. A survey have been conducted at two public organizations to determine time taken for user to complete their queue and to observe the current queueing system available at most premises. Most premises or organizations use ticket based queueing system where user have to predict the status of the queue themselves and have to come to the premises to join queue without proper planning. The problems with current queueing system is cause fatigue, wasted waiting time, and inadequate information about the current situation of the queue. With the increasing use of mobile phone and internet accessibility, mobile queuing can be implemented where user can take part in the queue via mobile device without them to come to the premises. Hence, development of SmartQ which is a queue management mobile application with geo-fencing feature can tackle this issue by implementing the mobile queueing for two organization. This mobile application also support multi-organization queue where this project is combined with other project, SmartQ: Real-Time Multi-organization Queue Management System using Predictive Modelling. This mobile applications also aid user to get information about the current status of queue at the organization such as number of people in queue and estimated waiting time. The geo-fence feature help the organization to limit number of user that can join queue within certain range from the premise. Functionality test and geo-fence accuracy test is conducted to test the functionality of the mobile application and to measure the accuracy of the geo-fence feature. Functionality test was conducted to determine each function of mobile application is up to specification and accuracy test of geo-fence features is conducted to test how accurate the geo-fence limit the user from take part in the queue given their location. In the future, this mobile application can be improved by including more organizations and allowing users to join queue from multiple organizations from different locations.

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